Remote Polarity Monitoring by Entanglement (RPM-E) for Non-Local Magnetometric Observation within Extreme High-Temperature Environments Such as Fusion Reactors as Well as Non-Local Tomographic Observations

19 April 2023
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Introduction

Tomographic imaging is currently limited by the necessity to either measure the way in which an EM emission is altered by the object being measured i.e. absorptiometry, a method which requires the placement of a sensor in the nadir of the measured object or, conversely, measuring reflected energy i.e. backscatter analysis.

There are any number of situations in which neither of those approaches are practical. High-temperature environments such as fusion chambers prohibit the placement of sensors within i.e. it is hotter than the surface of the Sun. In that particular application, the objective is to map magnetic eddies which take up only a tiny portion of a rotating plasma. The myriad alterations to polarity that a single X-Ray experiences when cutting across a toroidal fusion chamber would render any absorptiometric or backscatter analysis worthless given that there would be no way to know what changes happened to that EM at what point along its journey. X-Rays may not be practically reflected by mirror which makes analysis of properties such as polarity unfeasible when it comes to X-Ray energy. This inability to reflect X-Ray energy is, incidentally, the reason why it is that the December 5, 2022 experiment at the National Ignition Facility called for the emission of UV-C LASER light which was reflected prior to being “stepped up” into the X-Ray regime through its physical interaction with a cylinder composed of gold just prior to striking the $^3H/^2H$ pellet.

Abstract

X-Rays are ideal for making highly granular tomographic maps given their comparatively short wavelength. In the interest of meeting the challenge of creating an extreme high-temperature magnetometer as well as a valuable new tomographic tool with wide-ranging application, I propose the development of a new, broad category of tomographic mapping based upon the entanglement of two electromagnetic waves of entirely different frequency and the emission of those waves in opposing directions.

If two short pulses of EM emitted at two distinct frequencies may be entangled with one another with one being emitted in the direction of the area to be measured and the other being retained in order to monitor the state of what might be termed the “sensor wave,” it would be possible through time-of-flight analysis to determine the geophysical location of magnetic fluctuations within extremely hot areas or other denied areas wherein a conventional magnetometer could not function.

This could be achieved by monitoring the retained photon or wave of photons for alterations to their polarity (if a trapped photon, then by monitoring spin.) Under controlled conditions, one could be reasonably certain that any change to the “control wave” is a secondary result of entanglement with the sensor wave and the exertion of magnetic force upon that wave having effected a change in that wave’s polarity.

Given that this sensor wave would be sensitive to magnetic force, it would also be necessarily sensitive to the presence of metallic bodies. This means that this Remote Polarity Monitoring (RPM) may be used to achieve tomographic mapping of large-scale environments such as buildings as well as micro-scale environments such as computer circuitry. Furthermore, it may be used to assess whether a radio transmission device is in use even when outside of the range of detection of those waves. It may, for example, be used to detect the presence of highly-focused beams of EM given that the passage of such a sensor wave through a LASER-based communication beam, for instance, would effect a distinct alteration to a sensor wave’s polarity. Satellites relaying information; perhaps of a covert nature; to relay satellites using LASER data protocols to avoid radio triangulation could be located (and signal content, perhaps, even extrapolated) through an RPM magnetometer mechanism as the beam, however collimated it may be, could be detected from great distances and ultimately traced to its point of origin. In other words, a LASER could be used to read the data being sent by another LASER from a perpendicular direction and without the need to re-capture the light used to make the measurement.

Mechanism of Entanglement

An array of egg carton-style hydrogen traps collocated with a solid-state Coulomb Force Line mechanism composed of crystal would be used to exert Coulomb Force through the exact centers of numerous hydrogen traps. This would result in an alteration of the dynamics of the single orbiting electron and would render individual hydrogen atoms as a cold plasma i.e. the proton and the electron would begin to oscillate toward one another in a linear fashion rather than the electron orbiting the proton. To prevent the escape of the free electron, “lids” would be added to the “cartons.”

The repeated oscillation, per this author’s prediction, would lead to predictable entanglements of electromagnetism passing in close proximity to the hydrogen provided that their passage is synchronized. This is a result of the duplication of the quantum state of the trapped electron by means of what I term Neutrino Wave Uniforming (NWU.) Much as a magnet can uniform the magnetic polarity of a ferromagnetic material such as an iron filament or a cluster of a Hard Disk Drive, I posit that chance close approaches of electrons toward nuclei of atoms creates a surplus of neutrino (quantum electrical) energy which allows for the duplication of a quantum state over an area of perhaps about a nanometer. This would explain why it is that early experiments with entanglement, after a great many tries, were able to entangle atoms using a combination of LASER beams and these new electrons, if a particle is already negatively charged, fail to find a home in orbit of an atom and can make a rapid approach toward a positively charged nucleus. This results in an unseen surge in available neutrino energy and

brings about the uniforming of quantum states of any nearby electrons/photons.

For this concept to be practical, one must be able to generate entanglements predictably. To achieve that end, one needs to understand what is actually going on when a “chance entanglement” is achieved.

It should be noted that an array of hydrogen atoms undergoing this oscillation in synchrony would be able to foster entanglements over longer ranges of perhaps several nanometers; more than enough to facilitate our end goal.

Once this array is in place, extremely brief pulses of collimated EM are fired in opposing directions, one of them being meant to serve as the sensor wave (this is the wave that would, for the purposes of observing the interior of a fusion chamber, be in the X-Ray band) and the other being a control wave. Both waves would skim the hydrogen array at close proximity (less than 10nm) and as near to one another as possible. As the sensor wave travels toward its target, the control wave is shunted into a vacuum chamber consisting of two extremely flat mirrors composed of a reflective metamaterial.

Polarity Measurement Mechanism

To achieve the goal of neither corrupting the property of the control wave nor too-rapidly diminishing the wave, mirror-like metamaterials must be used to allow light to reflect back and forth millions of times before dissipating. Ideally, this mechanism would be devoid of atmosphere so as to protect the control wave from substantial influences. Importantly, absolute isolation is not required as it is in some quantum computational applications for entanglement to be maintained. In this case, we expressly desire for the sensor wave to be actively altered by its environment as this is essential for achieving the desired objective. To the extent that repeated reflections of the control way may alter polarity, these alterations may be corrected for or considered “allowable noise” within the system.

Achieving the task of measuring the polarity state of a pulse of light millions of times per second without corrupting that wave requires a more conventional, if sophisticated, type of magnetometer called a rubidium vapor magnetometer. These magnetometers may be very small and arrayed so that light’s polarity may be measured from nanometers away, just behind the mirror-like material. For instance, three rubidium vapor cells acting as alarms, if they were to be tripped in a vertical series, would suggest a near-vertical polarity of light. The smaller the magnetometer cells, the more precisely polarity can be measured. (A later publication by this author dated 17 December 2023 describing a magnetometer which uses single, spinless photons as a measurement mechanism may be even more effective within the context of this mechanism.) Using lower frequencies of EM as a control wave may help to facilitate our objectives as the phase height of the EM would be greater and could therefore be detected by vapor cells a greater distance away from the plane of entanglement.

If we use IR light as our control wave, we may expect a phase height of approximately 24nm. This means that to get useful data, we would need for our vapor cells to be no larger than 5nm in dimeter, each. Such a specification falls well-within the realm of present-day capability.

Conclusion

Although theoretical, Remote Polarity Monitoring by Entanglement (RPM-E) would afford us an opportunity to leverage existing magnetometer technology as well as other extant technologies to construct a novel combined magnetometer/tomography mechanism of a qualitatively higher order.

Additional applications include medical imaging, subterranean geological mapping and aircraft detection.